

FIG.2

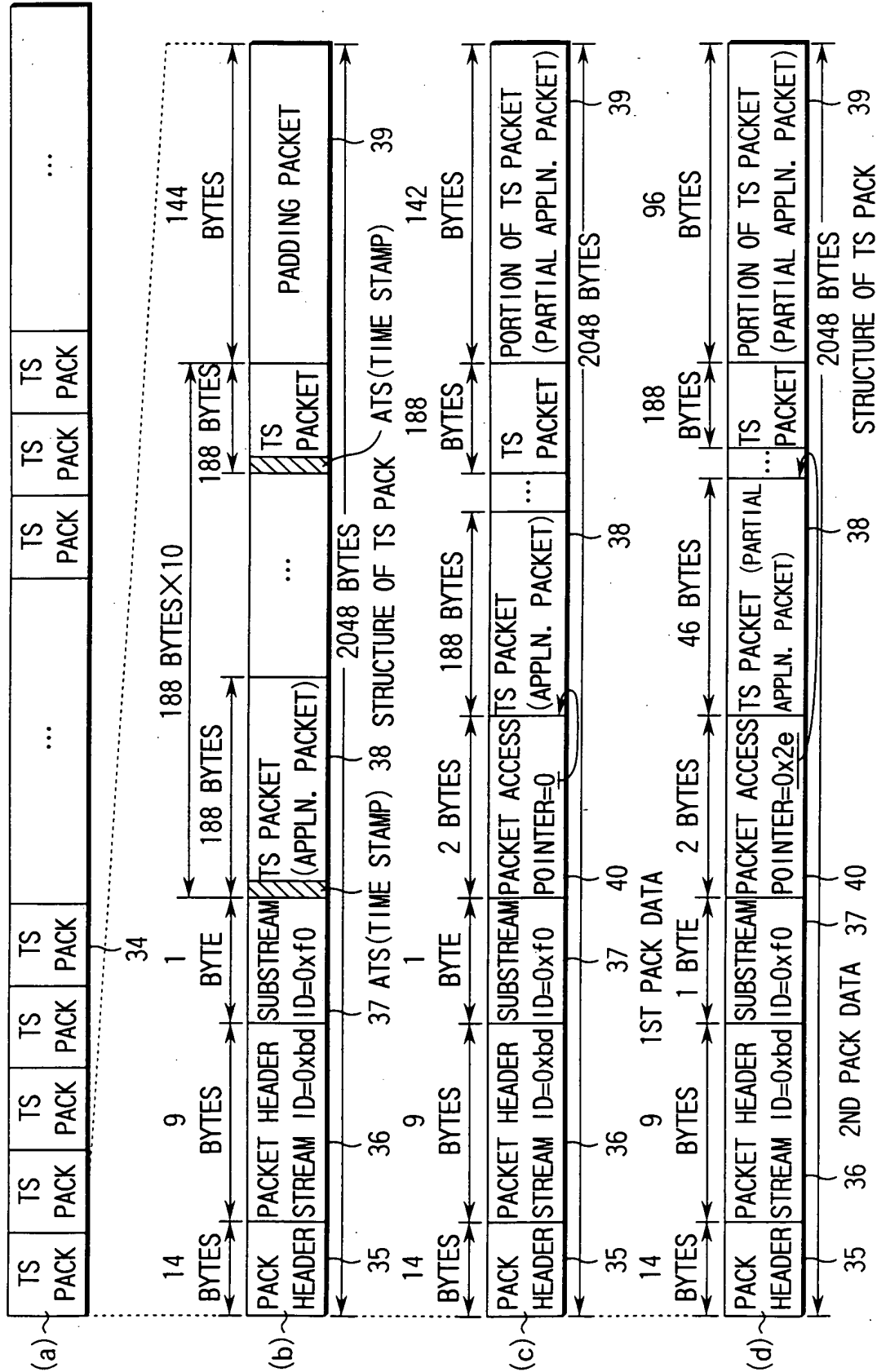


FIG. 3

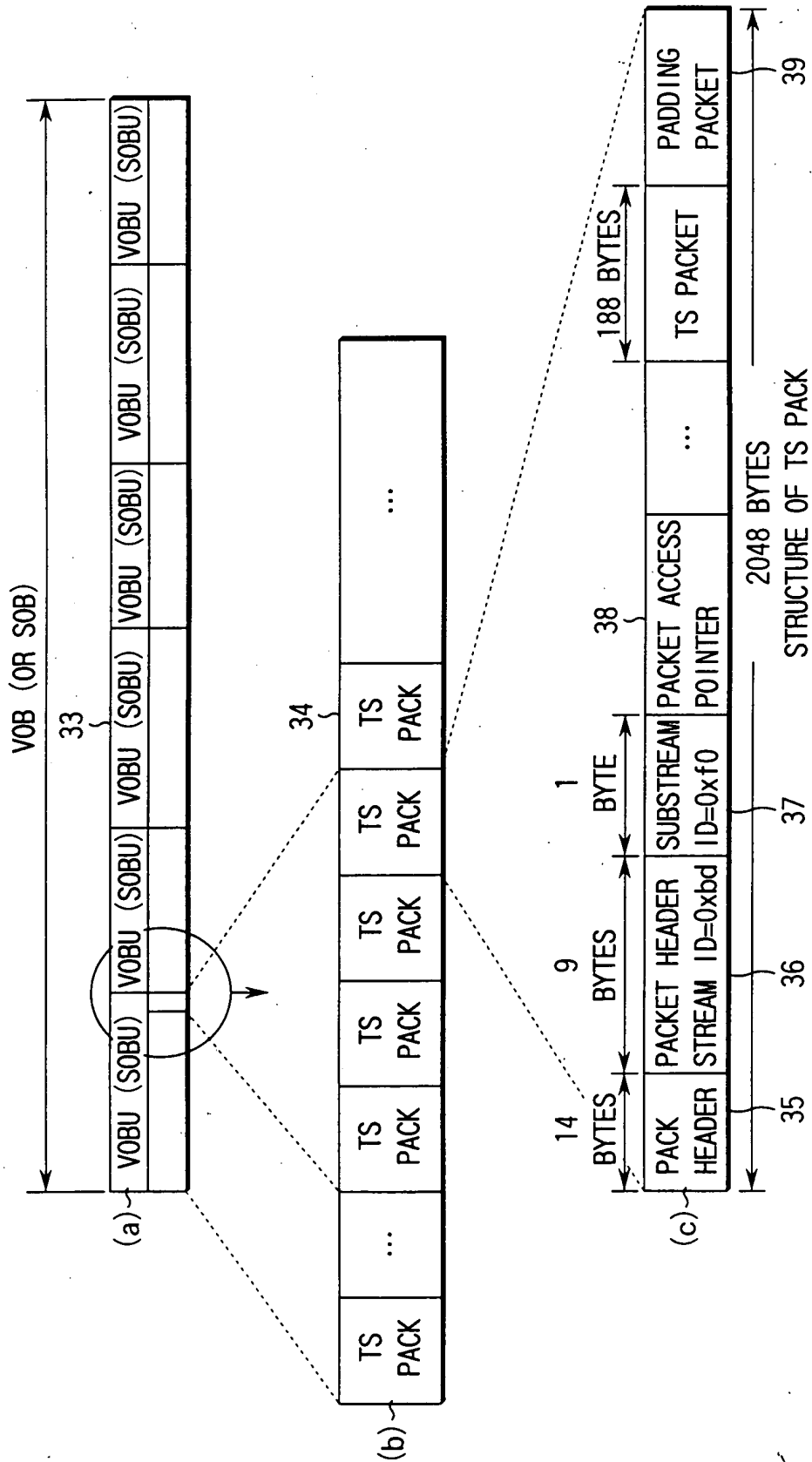
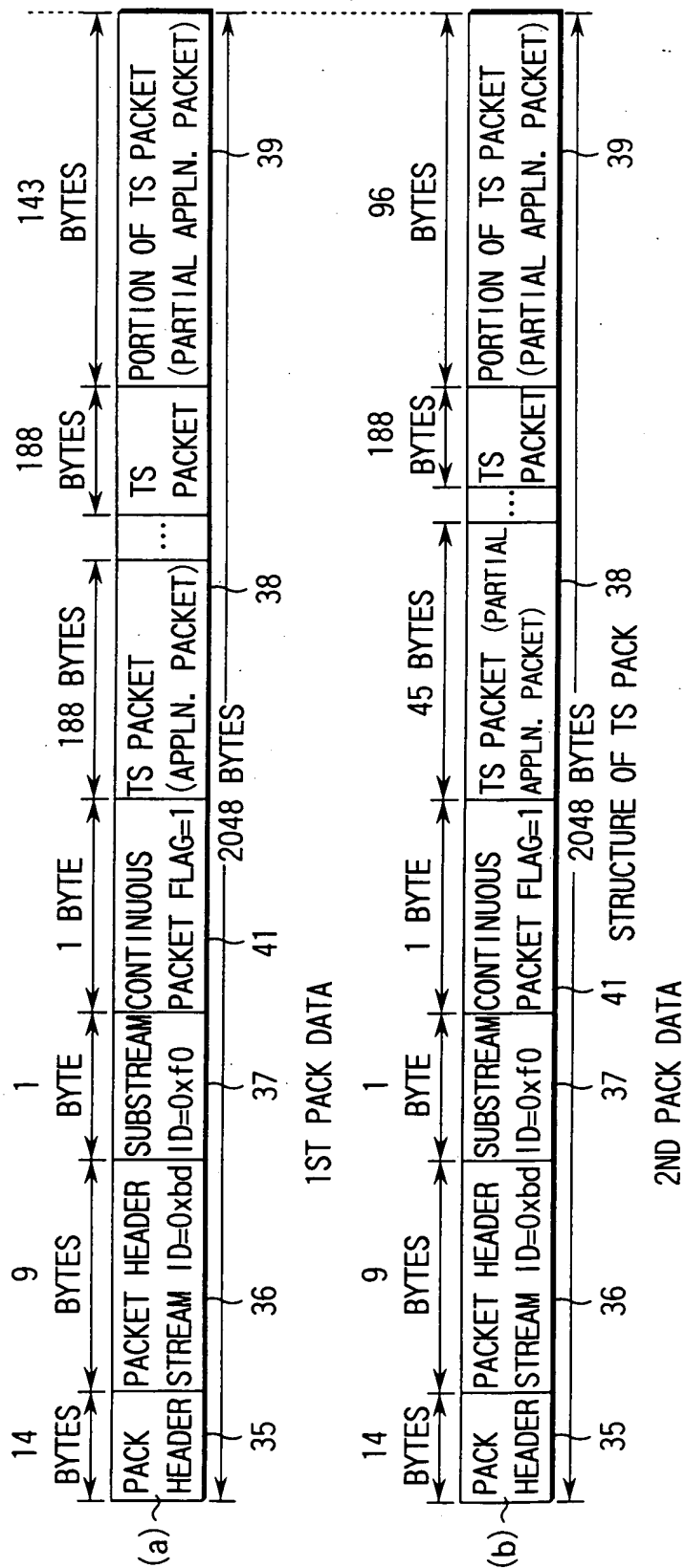
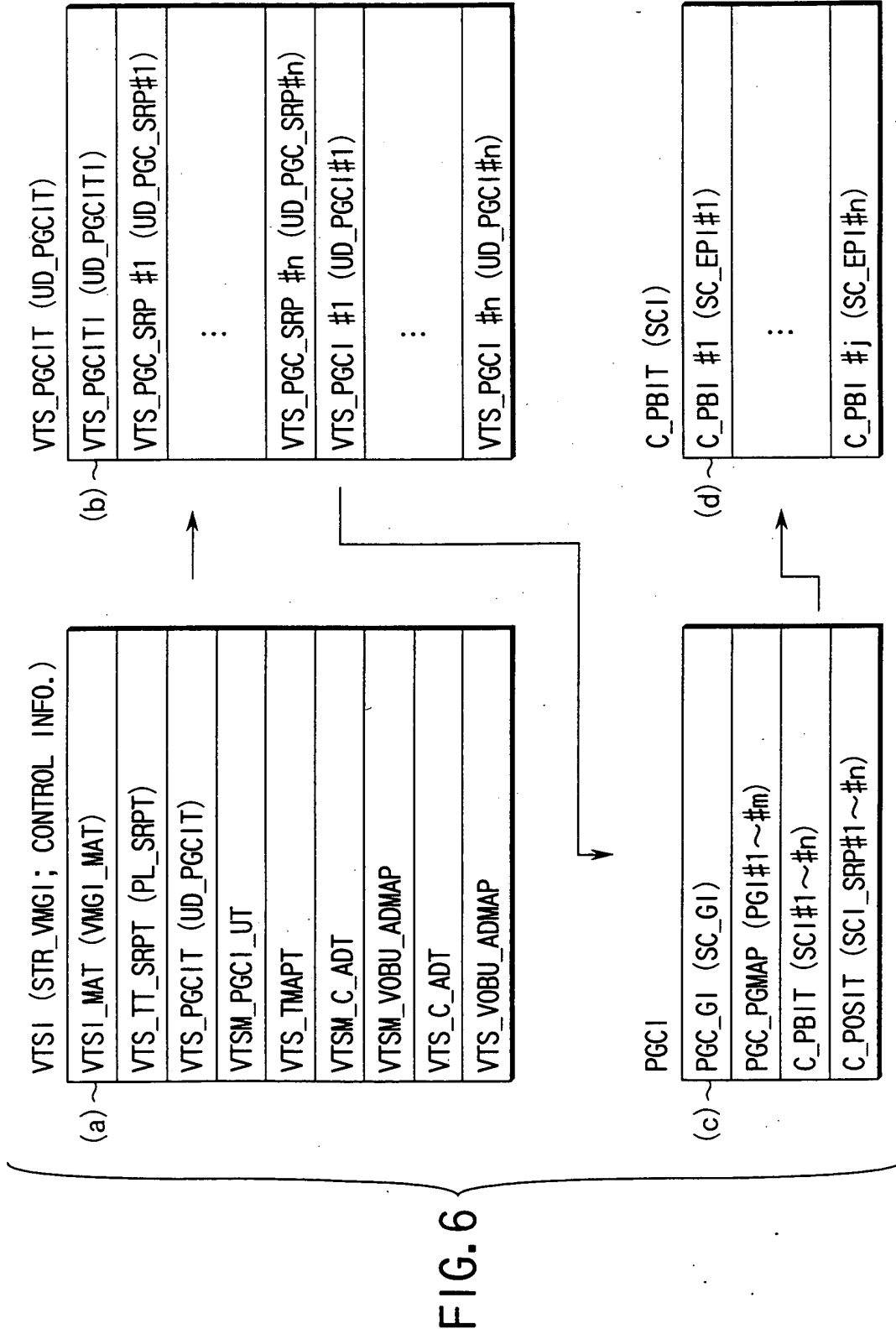


FIG. 4



IF CONTINUOUS PACKET FLAG=1, TS PACKET EXTENDS  
ACROSS NEXT PACK (FROM 39 OF (a) TO 38 OF (b))

FIG.5



| PGC_GI (SC_GI)                          |                                      | CONTENTS  |    |                                     |                |                      |                                |    |
|---|--------------------------------------|---|----|-------------------------------------|----------------|----------------------|--------------------------------|----|
| (a)                                     | PGC_CNT                              | NUMBER OF PROGRAMS, NUMBER OF CELLS                   |    |                                     |                |                      |                                |    |
|   | PGC_TRS_TM                           | RECORDING TIME PER PGC                                |    |                                     |                |                      |                                |    |
|   | SUPPORT INFO                         | SUPPORT INFORMATION (DETAILS ARE LISTED BELOW)        |    |                                     |                |                      |                                |    |
|   | PGC_PGMAP_SA                         | START ADDRESS OF PROGRAM MAP                          |    |                                     |                |                      |                                |    |
|   | C_PBIT_SA                            | START ADDRESS OF C_PBIT                               |    |                                     |                |                      |                                |    |
|   | C_POSIT_SA                           | START ADDRESS OF C_POSIT                              |    |                                     |                |                      |                                |    |
|   | ARCHIVE FLAG<br>(C_TY1 & TE)         | ERASE INHIBITION FLAG<br>0: FREE, 1: SAVE PERMANENTLY |    |                                     |                |                      |                                |    |
|   | SC_EPI_Ns                            | NUMBER OF ENTRY POINT INFORMATION                     |    |                                     |                |                      |                                |    |
|   | SOB_N                                | STREAM OBJECT NUMBER                                  |    |                                     |                |                      |                                |    |
|   | SC_S_APAT                            | STREAM CELL START APAT                                |    |                                     |                |                      |                                |    |
|   | SC_E_APAT                            | STREAM CELL END APAT                                  |    |                                     |                |                      |                                |    |
|   | if (TE=='10b') {                     |   |    |                                     |                |                      |                                |    |
|   | ERA_S_APAT                           | ERASE START APAT                                      |    |                                     |                |                      |                                |    |
|   | ERA_E_APAT                           | ERASE END APAT  |    |                                     |                |                      |                                |    |
|   |                                      | b7  | b5 | b4                                  | b3             | b2                   | b1                             | b0 |
| (b)                                     | IDENTIFICATION                       | SCD   |    | PCR                                 | PAT,           | UNIT START           | RANDOM                         |    |
|   | CODE OF STB<br>THAT RECORDED<br>DATA | SUPPORT   |    | SUPPORT                             | PMT<br>SUPPORT | INDICATOR<br>SUPPORT | ACCESS<br>INDICATOR<br>SUPPORT |    |
| RANDOM ACCESS<br>INDICATOR SUPPORT FLAG |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | STB IDENTIFICATION CODE             |                |                      |                                |    |
| UNIT START INDICATOR<br>SUPPORT FLAG    |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | 001:STB OF BS DIGITAL BROADCAST     |                |                      |                                |    |
| PAT, PMT SUPPORT FLAG                   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | 010:Ver2 STB OF DirecTV             |                |                      |                                |    |
| PCR SUPPORT FLAG                        |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | 011:Ver1 STB OF SKY PERFECT TV      |                |                      |                                |    |
| SCD SUPPORT FLAG                        |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | C_TY1...'010b' SHALL BE DESCRIBED   |                |                      |                                |    |
| PCR=PRESENTATION CLOCK<br>REFERENCE     |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | FOR ALL STREAM CELLS                |                |                      |                                |    |
| SCD=SPLICE COUNTDOWN                    |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | TE...'00b':THIS CELL IS IN THE      |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | "NORMAL" STATE                      |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | '01b':THIS CELL IS IN "TEMPORARILY  |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | ERASED" STATE; AND THIS CELL STARTS |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | AFTER THE FIRST APPLICATION PACKET  |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | OF A SOBU AND ENDS BEFORE THE LAST  |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | APPLICATION PACKET OF THE SAME SOBU |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | '10b':THIS CELL IS IN "TEMPORARILY  |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | ERASED" STATE; AND THIS CELL        |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | CONTAINS AT LEAST ONE SOBU          |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | BORDER (FIRST OR LAST               |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | APPLICATION PACKET OF A             |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | SOBU). ERA_S_APAT AND               |                |                      |                                |    |
|   |                                      | 0b...NOT SUPPORTED,<br>1b...SUPPORTED                 |    | ERA E APAT EXIT FOR THIS CELL       |                |                      |                                |    |

FIG.7

C\_PBI (SCI)

| RBP          |                     | CONTENTS   | NUMBER<br>OF BYTES |
|--------------|---------------------|--|--------------------|
| 0 TO 0       | C_CAT (C_TY)        | CELL TYPE 02: STREAMER CELL                              |                    |
| 1 TO 4       | C_ARLTM             | STC VALUE OR PCR UPON RECORDING HEAD OF CELL OF INTEREST |                    |
| 5 TO 8       | C_FVOBU_SA          | START ADDRESS OF CELL                                    |                    |
| 9 TO 12      | C_LVOBU_SA          | START ADDRESS OF LAST VOB OF CELL                        |                    |
| 13 TO 16     | C_LVOBU_EA          | END ADDRESS OF LAST VOB OF CELL                          |                    |
| 17 TO 18     | TS PACKET LENGTH    | TS PACKET LENGTH: NORMAL: 0xbc                           |                    |
| 19 TO 22     | REFPIC_Ns (AU_Ns)   | NUMBER OF I-PICTURES                                     |                    |
| 23 TO 26     | REFPIC_SA_#1 (AUSM) | START ADDRESS OF I-PICTURE #1                            |                    |
| 27 TO 30     | REFPIC_EA_#1 (AUEM) | END ADDRESS OF I-PICTURE #1                              |                    |
|              | :                   |  |                    |
| 23+(n-1) X 8 | REFPIC_SA_#n (AUSM) | START ADDRESS OF I-PICTURE #n                            |                    |
| 27+(n-1) X 8 | REFPIC_EA_#n (AUEM) | END ADDRESS OF I-PICTURE #n                              |                    |
|              |                     | TOTAL  | 30+(n-1) X 8       |

REFPIC\_Ns: NUMBER OF I-PICTURES ("0" IF NO RANDOM ACCESS INDICATOR IS AVAILABLE)

AUD REFPIC\_SA#n: ADDRESS OF TS PACK INCLUDING FIRST TS PACKET OF I-PICTURE #n

(TS PACK WITH ACTIVE RANDOM ACCESS INDICATOR)

REFPIC\_EA#n: ADDRESS OF TS PACK INCLUDING LAST TS PACKET OF I-PICTURE #n

(TS PACK WITH ACTIVE UNIT START INDICATOR)

("0" IF NO UNIT START INDICATOR IS AVAILABLE)

FIG. 8



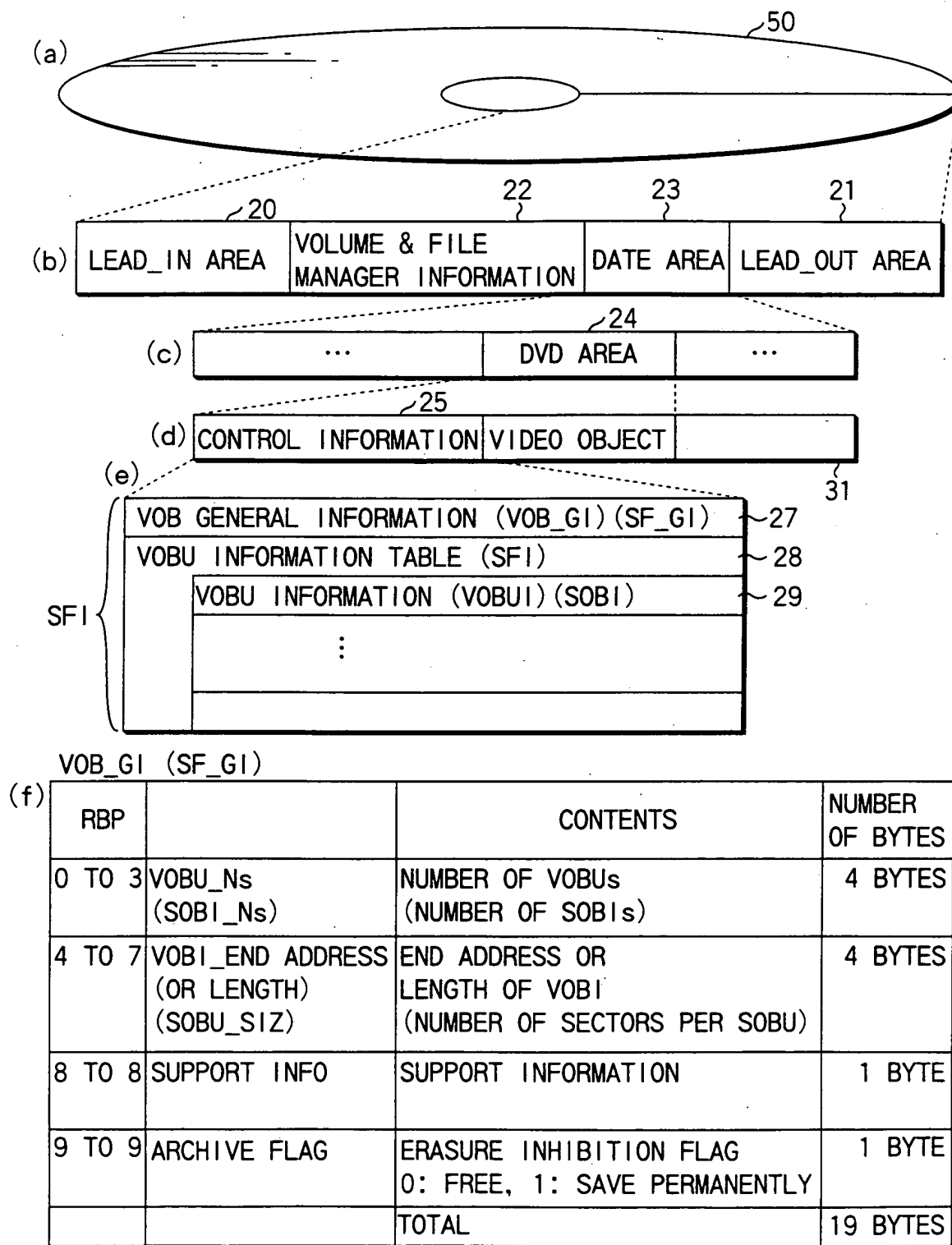


FIG. 9

VOBUI (SOBI)

| RBP        |                              | CONTENTS  | NUMBER OF BYTES |
|------------|------------------------------|---|-----------------|
| 0 TO 3     | VOBU START ADDRESS           | START ADDRESS OF VOBUI                                    |                 |
| 4 TO 7     | VOBU END ADDRESS (OR LENGTH) | END ADDRESS OR LENGTH OF VOBUI                            |                 |
| 8 TO 11    | VOBU_RECTM                   | STC VALUE OR PCR UPON RECORDING HEAD OF VOBUI OF INTEREST |                 |
| 12 TO 13   | TS PACKET LENGTH             | TS PACKET LENGTH: NORMAL: 0xbc                            |                 |
| 14 TO 17   | REFPIC_Ns (AU_Ns)            | NUMBER OF I-PICTURES                                      |                 |
| 18 TO 21   | REFPIC_SA_#1 (AUSM)          | START ADDRESS OF I-PICTURE #1                             |                 |
| 22 TO 25   | REFPIC_EA_#1 (AUEM)          | END ADDRESS OF I-PICTURE #1                               |                 |
|            | :                            |   |                 |
| 16+(n-1)X8 | REFPIC_SA_#n (AUSM)          | START ADDRESS OF I-PICTURE #n                             |                 |
| 20+(n-1)X8 | REFPIC_EA_#n (AUEM)          | END ADDRESS OF I-PICTURE #n                               |                 |
|            |                              | TOTAL   | 25+(n-1)X8      |

REFPIC\_Ns: NUMBER OF I-PICTURES ("0" IF NO RANDOM ACCESS INDICATOR IS AVAILABLE)

AUD REFPIC\_SA#n: ADDRESS OF TS PACK INCLUDING FIRST TS PACKET OF I-PICTURE #n  
(TS PACK WITH ACTIVE RANDOM ACCESS INDICATOR)

REFPIC\_EA#n: ADDRESS OF TS PACK INCLUDING LAST TS PACKET OF I-PICTURE #n  
(TS PACK WITH ACTIVE UNIT START INDICATOR)  
("0" IF NO UNIT START INDICATOR IS AVAILABLE)

FIG.10

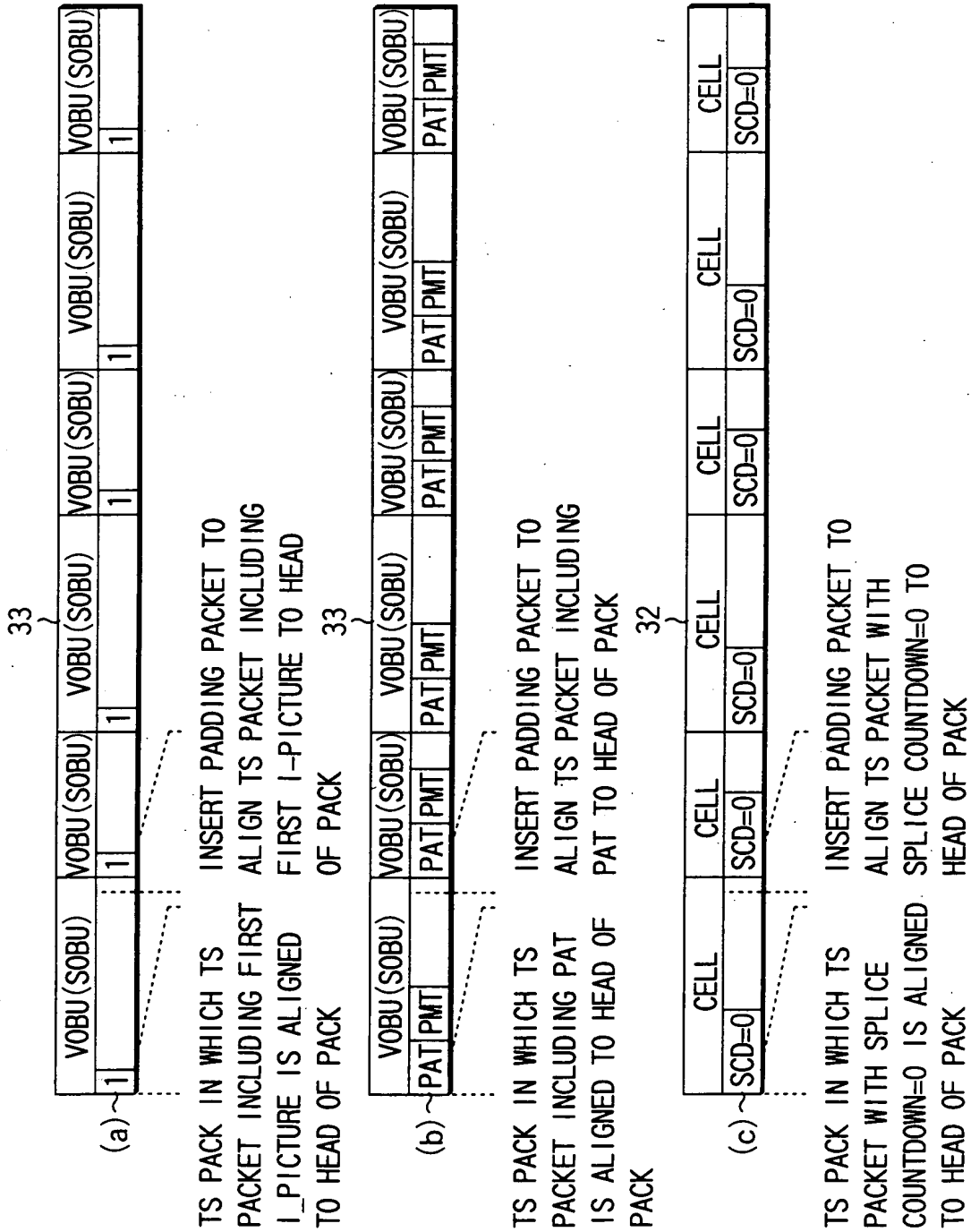


FIG. 11

32

| CELL | CELL | CELL | CELL | CELL | CELL |
|------|------|------|------|------|------|
| PAT  | PMT  | PAT  | PMT  | PAT  | PMT  |

(a)

TS PACK IN WHICH TS  
PACKET INCLUDING PAT  
IS ALIGNED TO HEAD OF  
PACK

INSERT PADDING PACKET TO  
ALIGN TS PACKET INCLUDING  
PAT TO HEAD OF PACK

| PGC | PG  | PG  | PG  | PG  | PG  |
|-----|-----|-----|-----|-----|-----|
| PAT | PMT | PAT | PMT | PAT | PMT |

(b)

TS PACK IN WHICH TS  
PACKET INCLUDING PAT  
IS ALIGNED TO HEAD OF  
PACK

INSERT PADDING PACKET TO  
ALIGN TS PACKET INCLUDING  
PAT TO HEAD OF PACK

| PGC | PGC | PGC | PGC | PGC | PGC |
|-----|-----|-----|-----|-----|-----|
| PAT | PMT | PAT | PMT | PAT | PMT |

(c)

TS PACK IN WHICH TS  
PACKET INCLUDING PAT  
IS ALIGNED TO HEAD OF  
PACK

INSERT PADDING PACKET TO  
ALIGN TS PACKET INCLUDING  
PAT TO HEAD OF PACK

FIG. 12

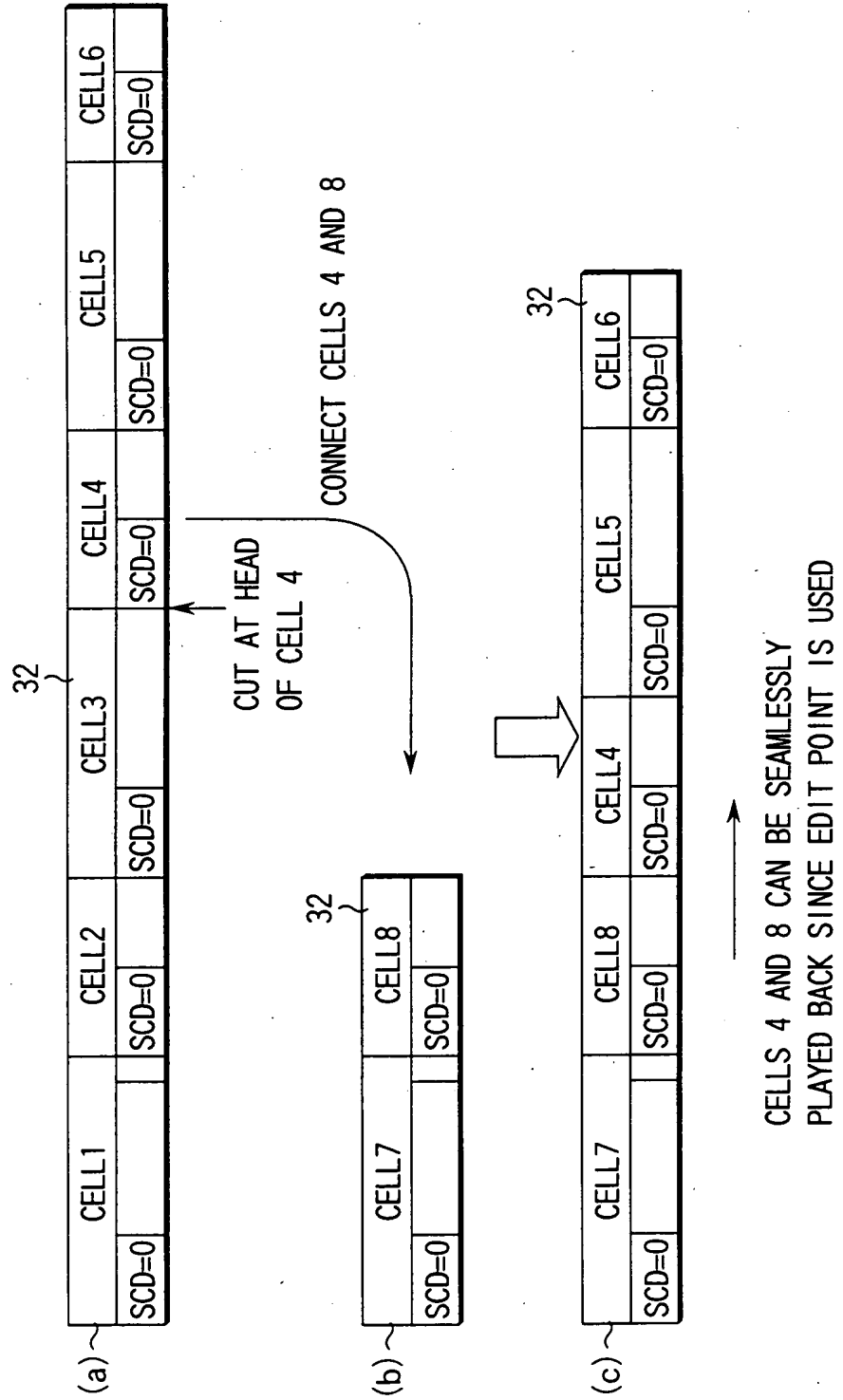


FIG.13

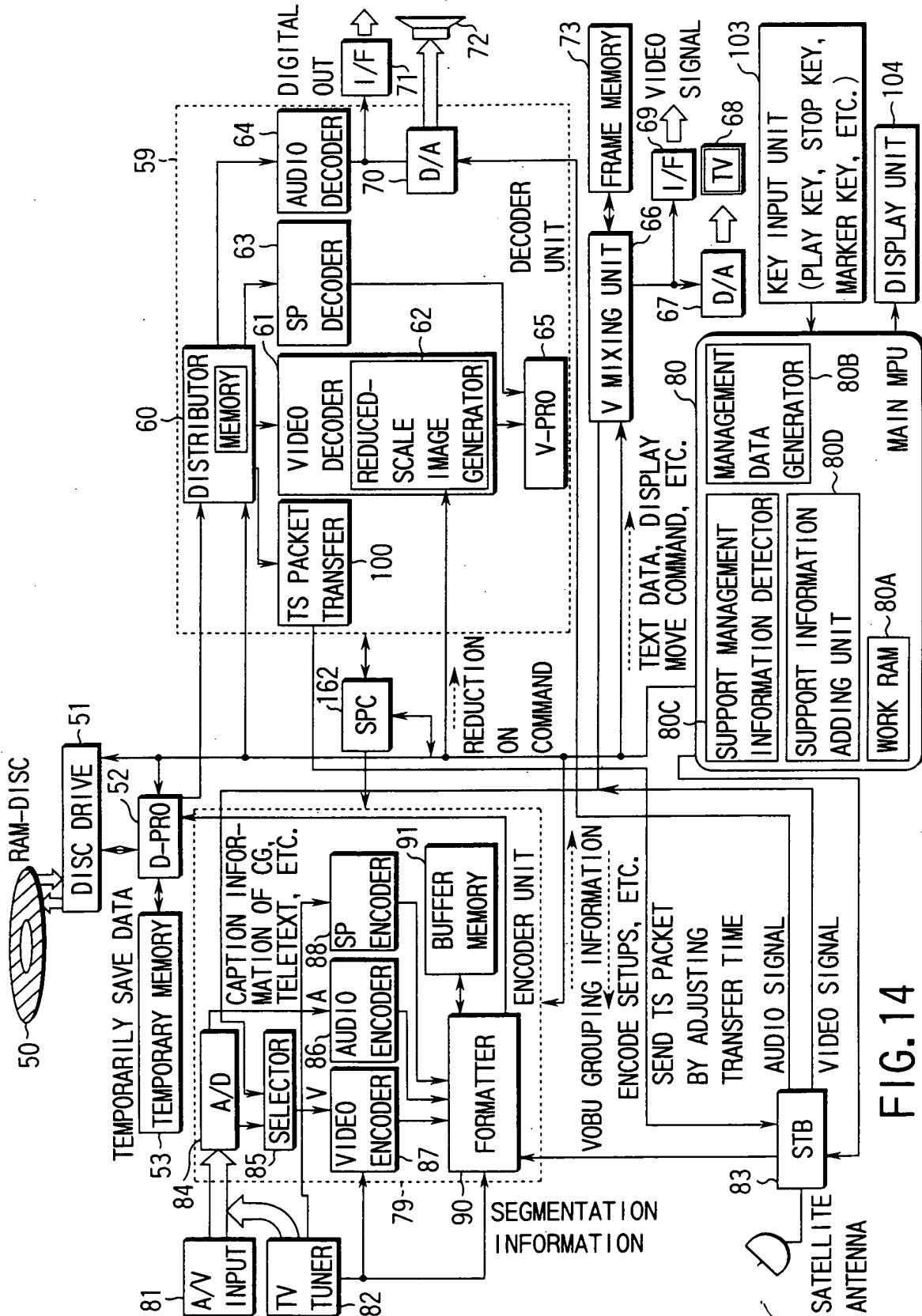


FIG. 14

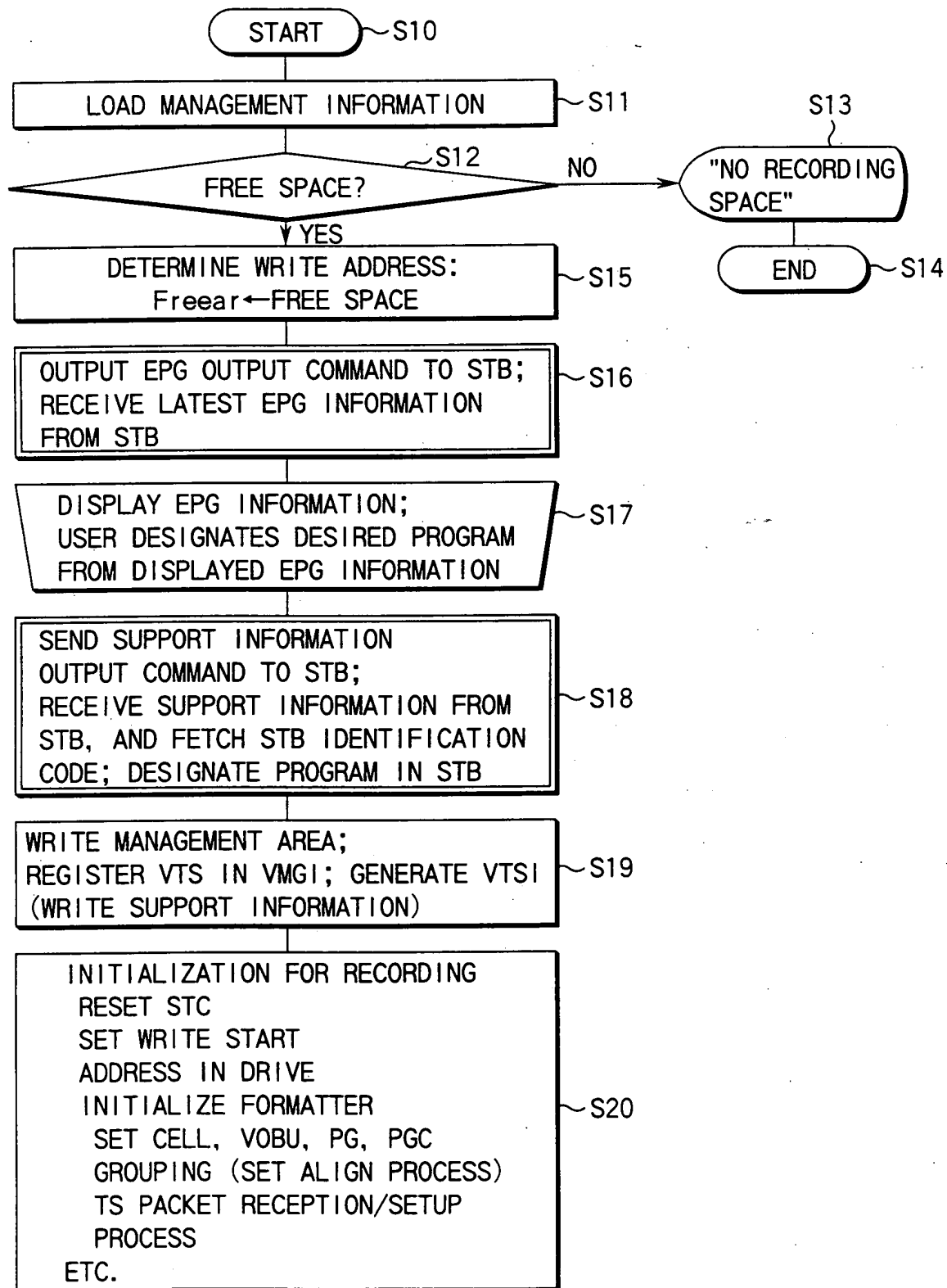


FIG. 15

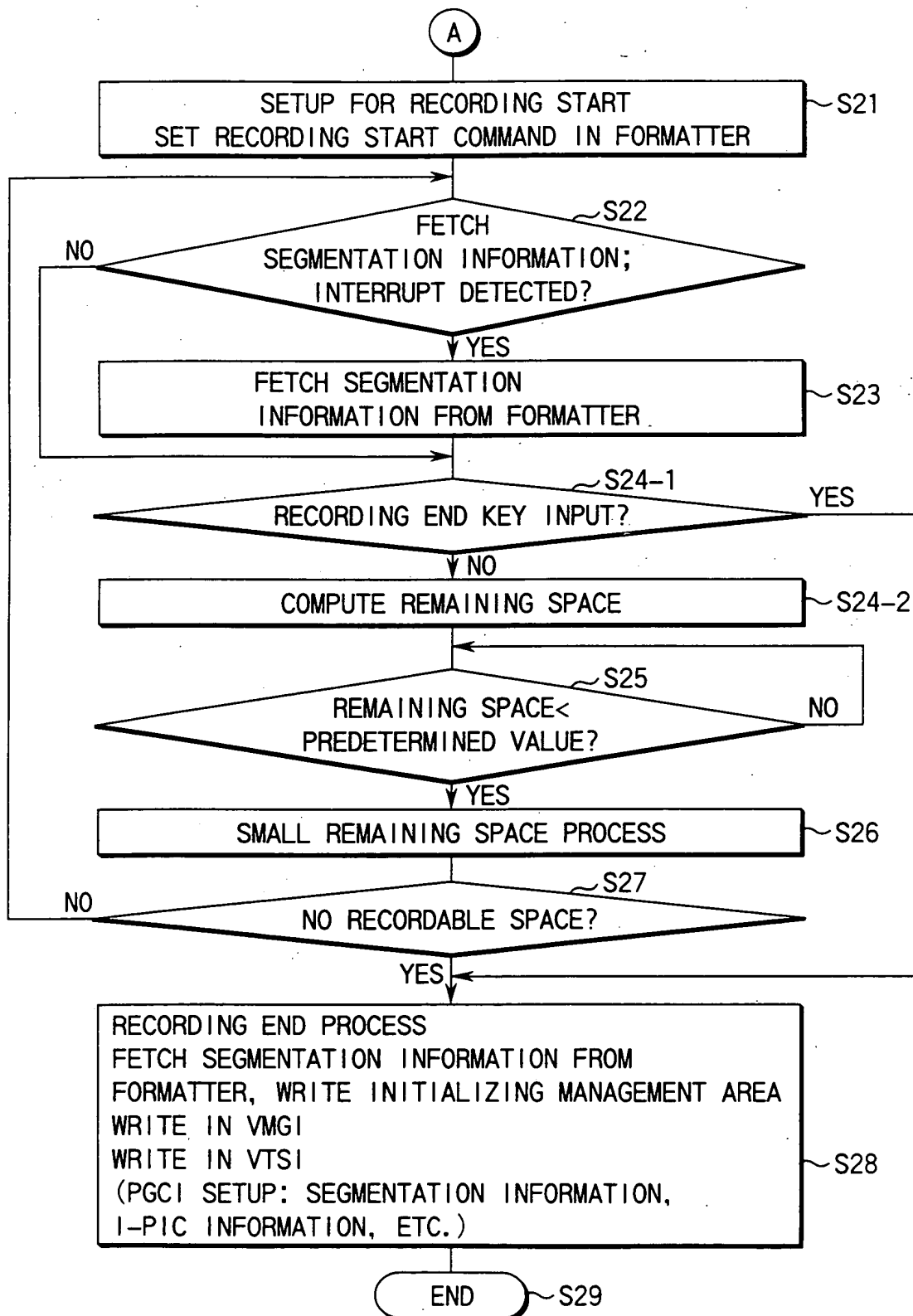


FIG. 16



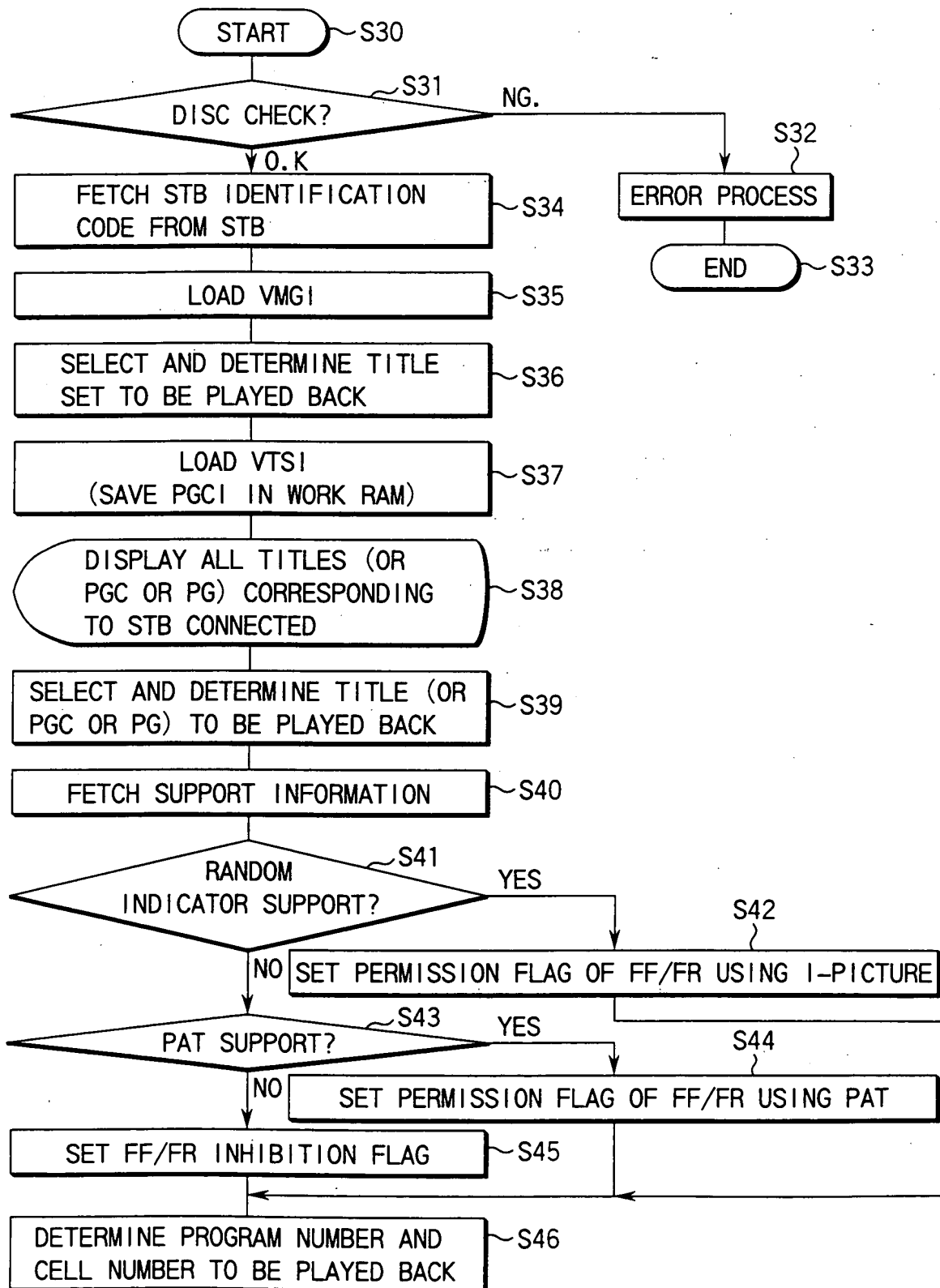


FIG. 17

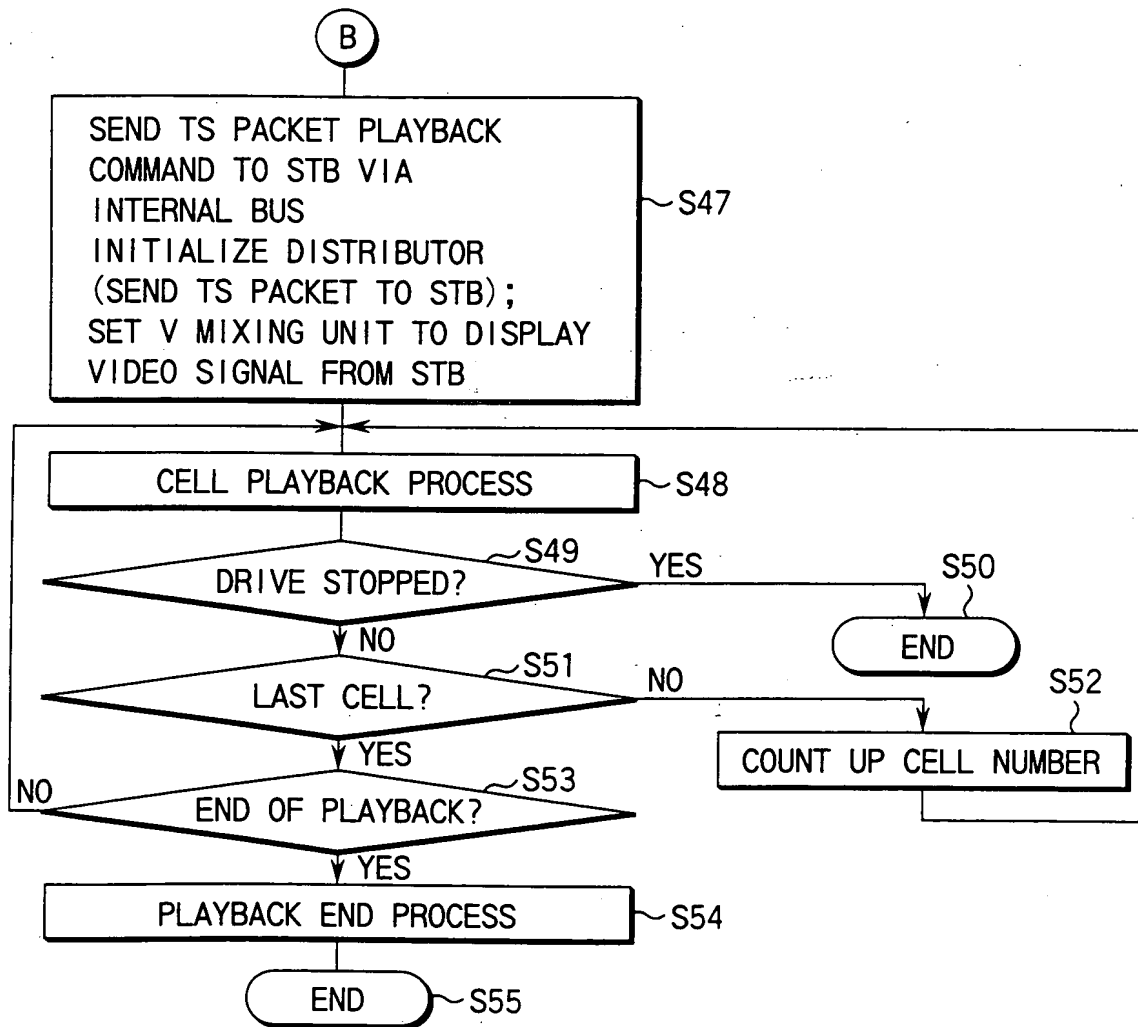


FIG. 18

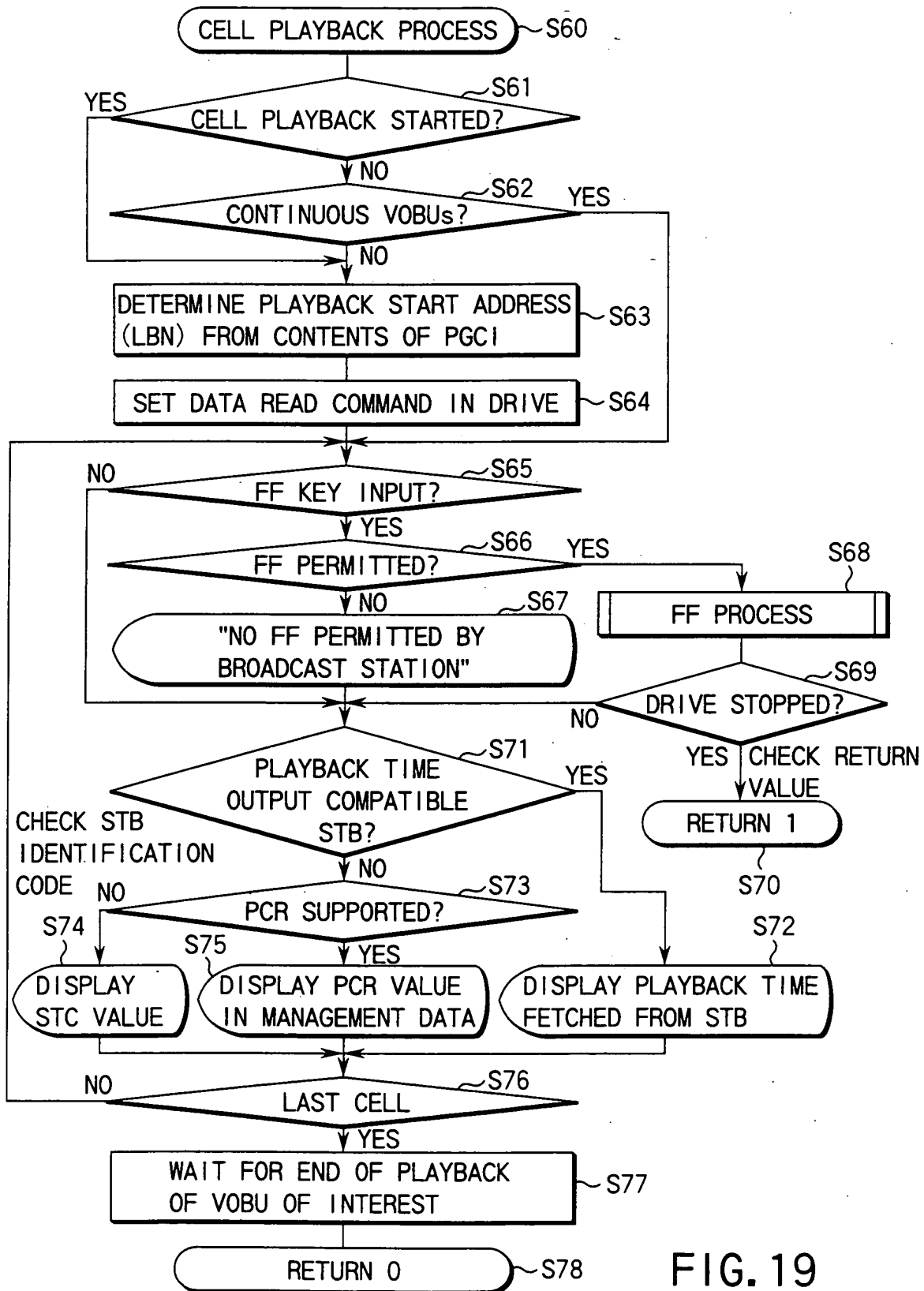


FIG. 19

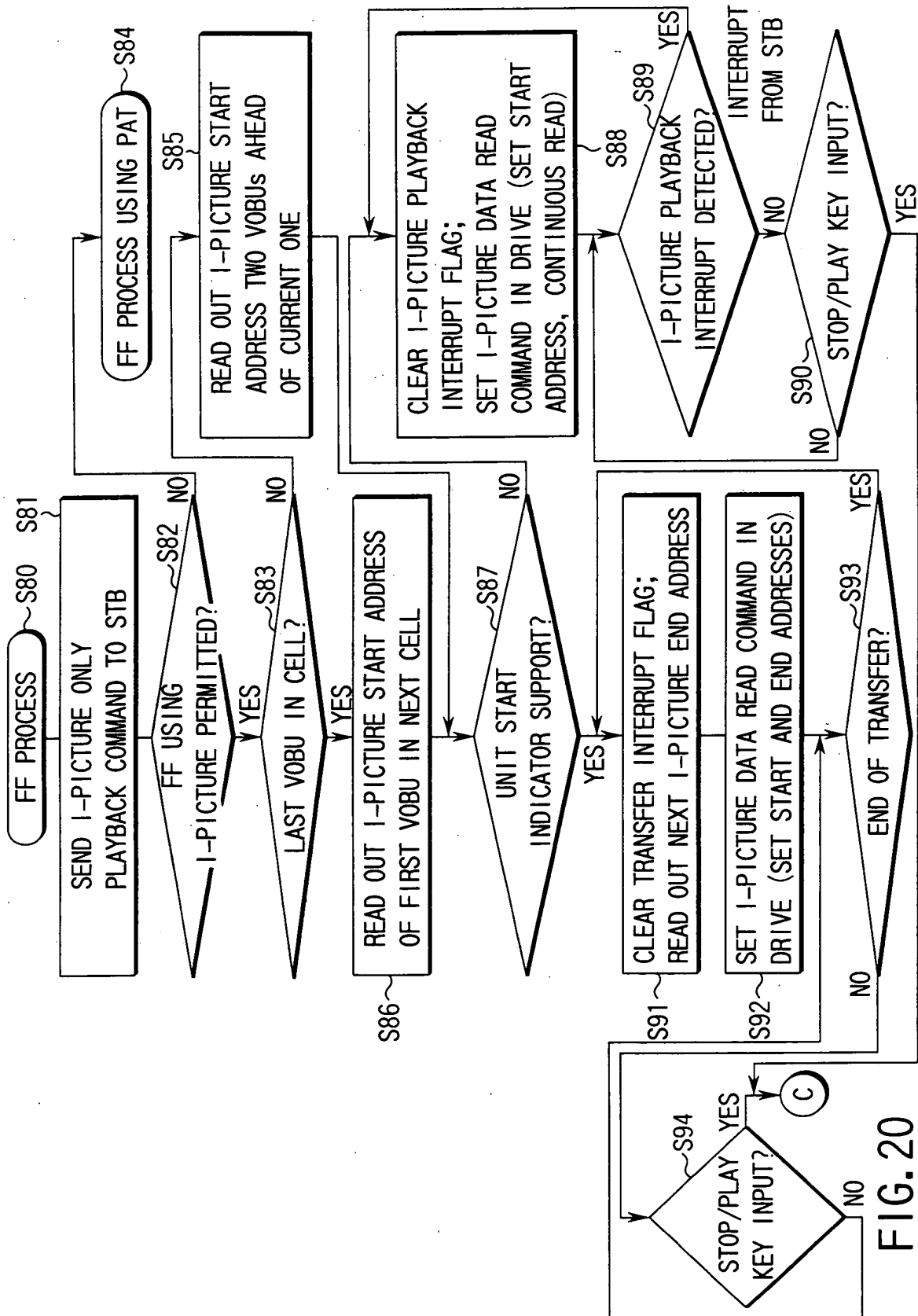


FIG. 20

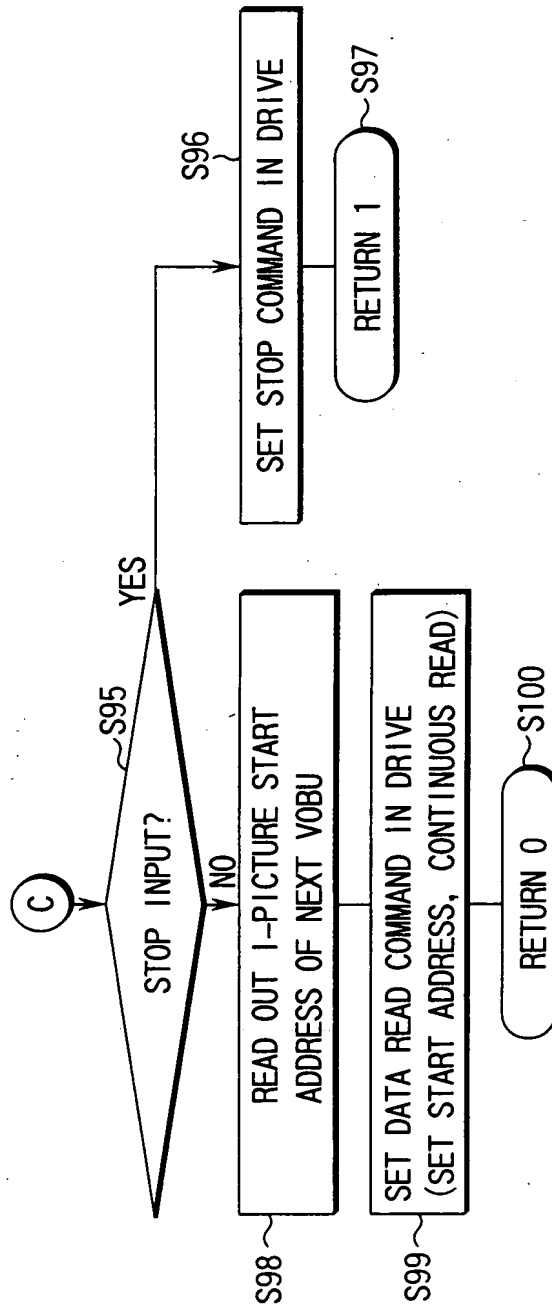


FIG. 21

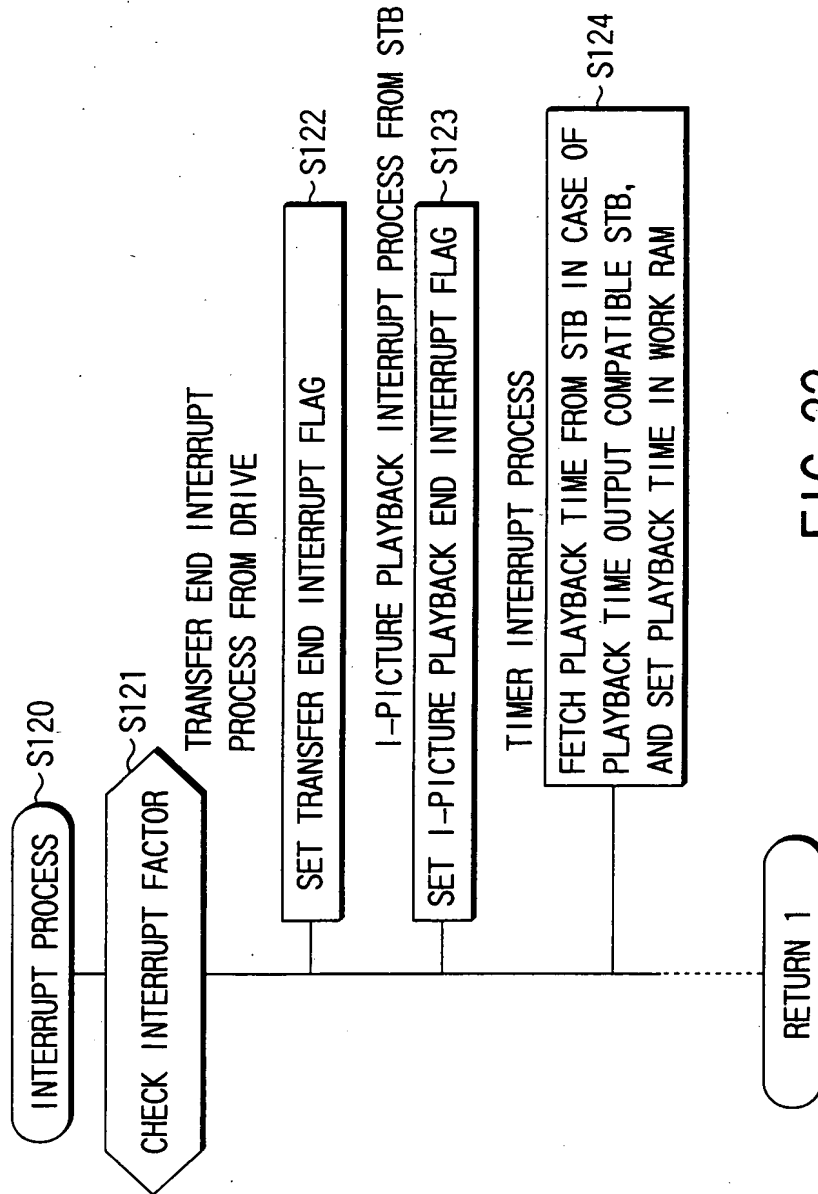


FIG. 22

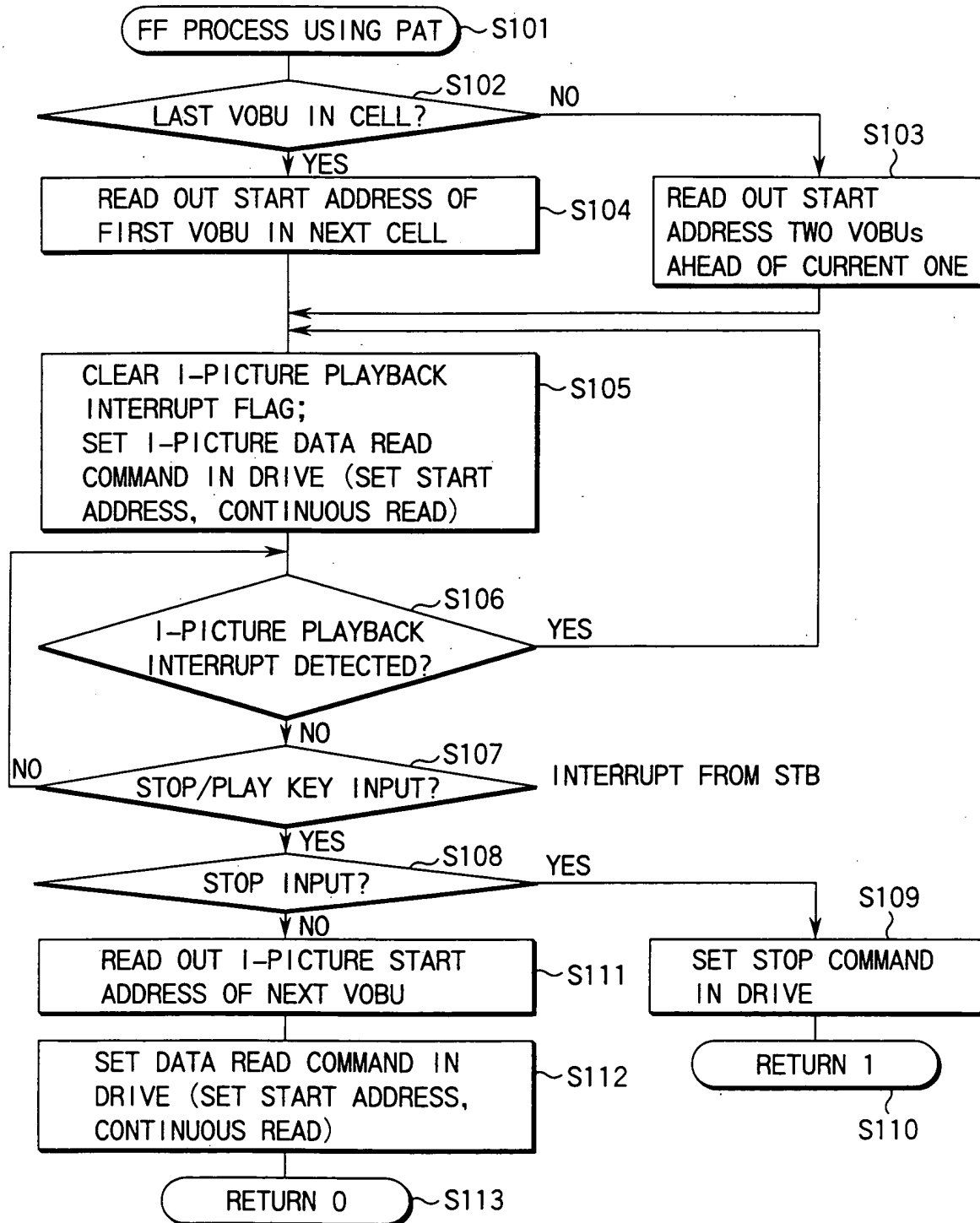


FIG. 23

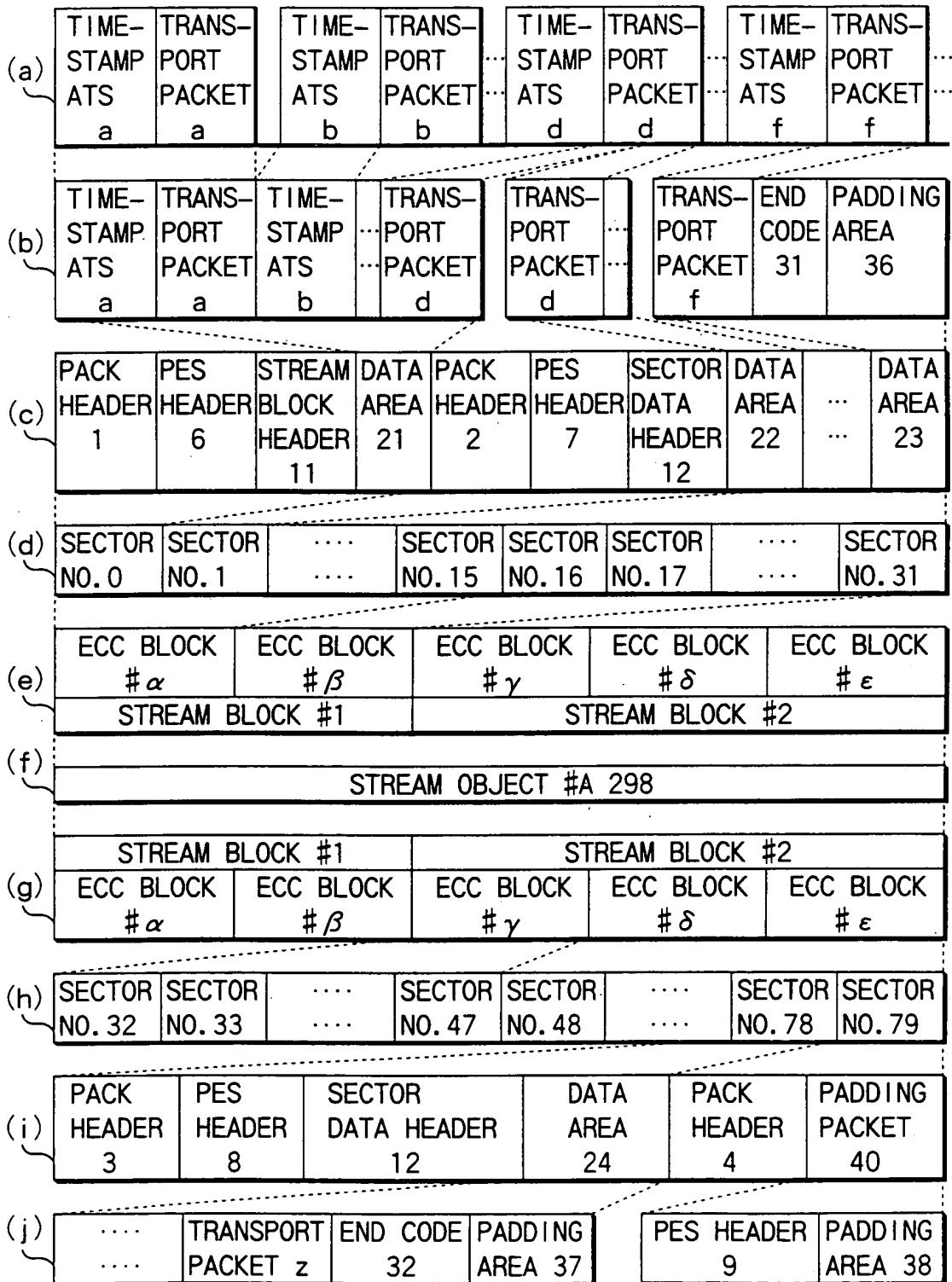


FIG. 24



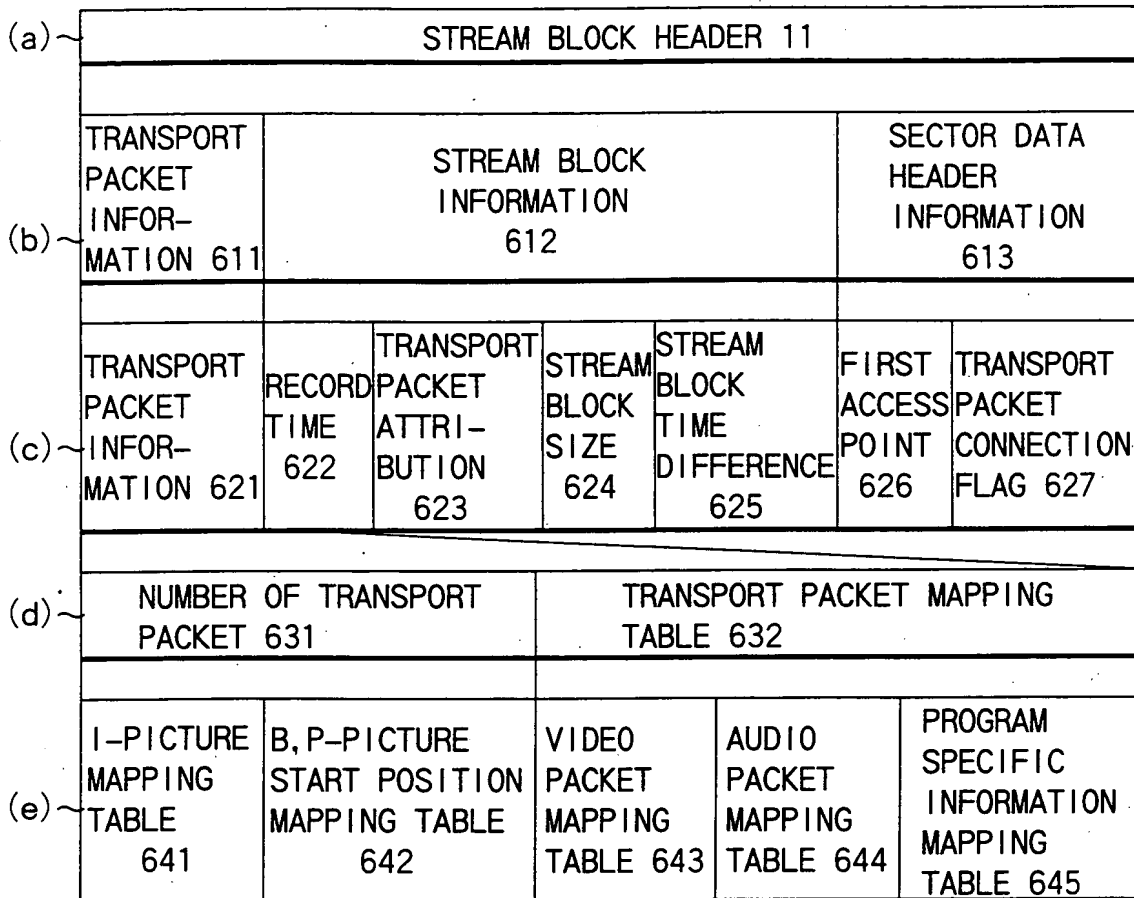


FIG. 25

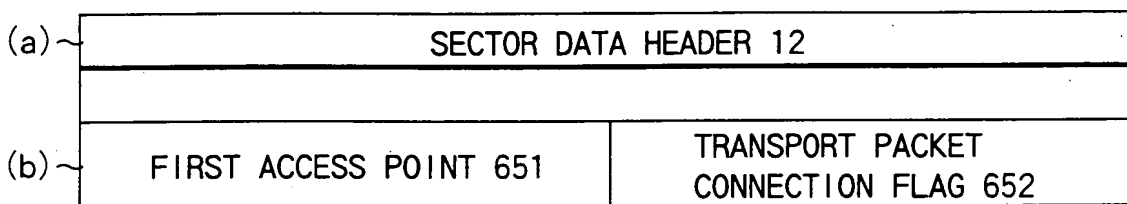


FIG. 26

CONSTRAINTS ON MPEG SPECIFICATIONS FOR SOB

|                                      |   |
|--------------------------------------|---|
| SYSTEM HEADER                        | SHALL NOT BE INCLUDED   |
| SCR VALUE IN THE FIRST PACK OF A SOB | ANY VALUE   |
| MPEG PROGRAM_END_CODE                | SHALL NOT BE INCLUDED   |
| STREAM_ID                            | SHALL BE EQUAL TO BfH<br>(PRIVATE_STREAM_2)<br>IN ALL PES PACKETS |

FIG. 27

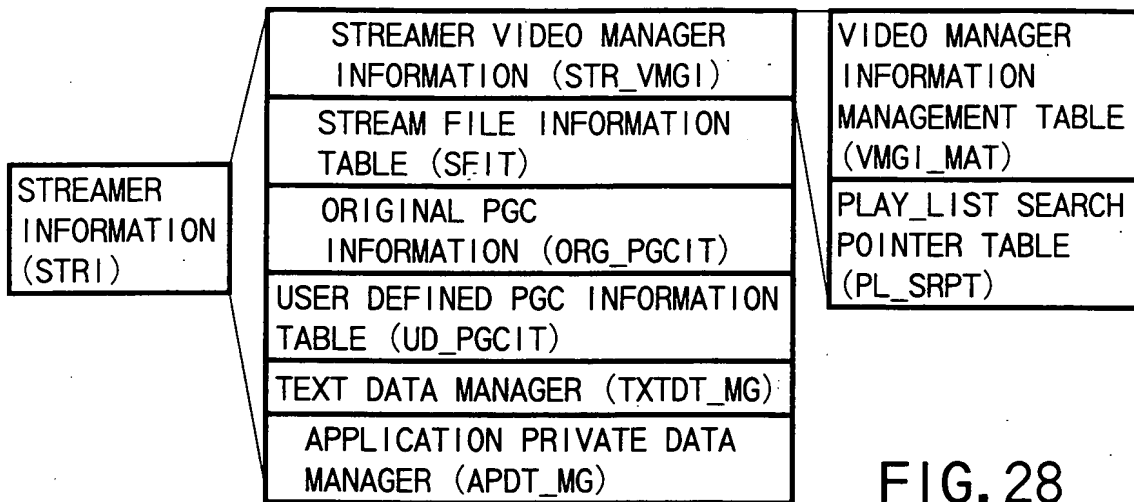


FIG. 28

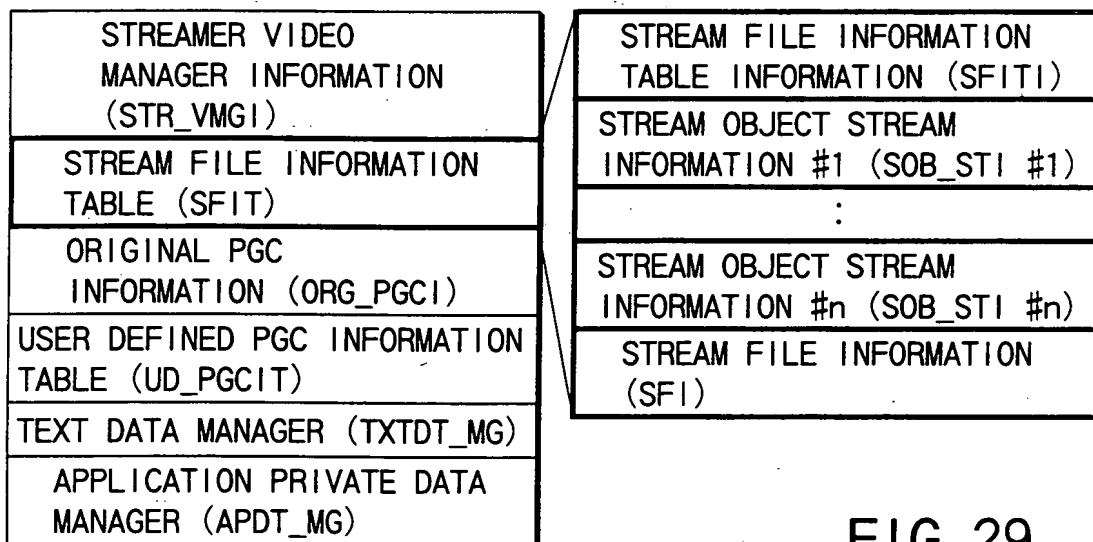


FIG. 29

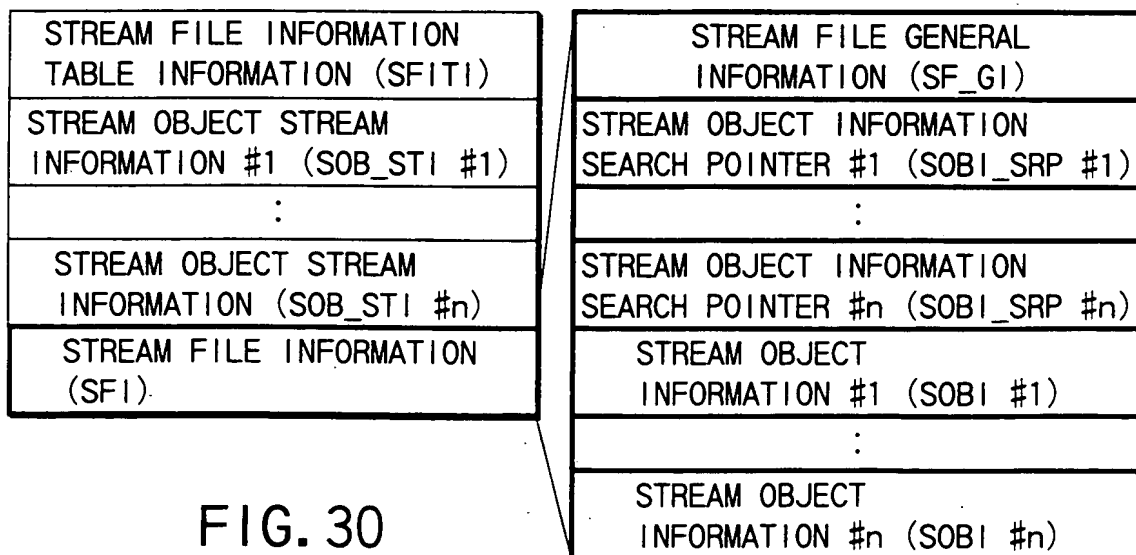


FIG. 30

STREAM FILE GENERAL INFORMATION (SF\_GI)

|              | CONTENTS                   | NUMBER OF BYTES |
|--------------|----------------------------|-----------------|
| (1) SOBI_Ns  | NUMBER OF SOBIs            | 2               |
| (2) SOBU_SIZ | NUMBER OF SECTORS PER SOBU | 2               |
| (3) MTU_SHFT | MAPPING TIME UNIT SHIFT    | 1               |
| (4) RESERVED | RESERVED                   | 1               |
|              | TOTAL                      | 6               |

FIG. 31

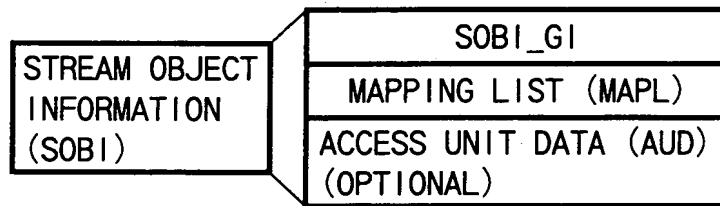


FIG. 32

STREAM OBJECT INFORMATION GENERAL INFORMATION (SOBI\_GI)

|                 | CONTENTS                       | NUMBER OF BYTES |
|-----------------|--------------------------------|-----------------|
| (1) SOB_TY      | SOB TYPE                       | 1               |
| (2) SOB_REC_TM  | SOB RECORDING TIME             | 5               |
| (3) SOB_STI_N   | SOB STREAM INFORMATION NUMBER  | 1               |
| (4) AUD_FLAGS   | ACCESS UNIT DATA FLAGS         | 1               |
| (5) SOB_S_APAT  | SOB START APAT                 | 6               |
| (6) SOB_E_APAT  | SOB END APAT                   | 6               |
| (7) SOB_S_SOB   | FIRST SOBU OF THIS SOB         | 4               |
| (8) MAPL_ENT_Ns | NUMBER OF MAPPING LIST ENTRIES | 4               |
|                 | TOTAL                          | 28              |

FIG. 33

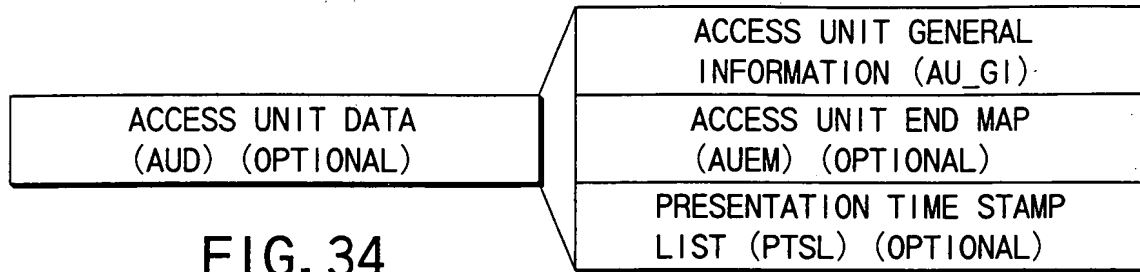


FIG. 34

ACCESS UNIT GENERAL INFORMATION (AU\_GI)

|           | CONTENTS                                       | NUMBER OF BYTES           |
|-----------|--|---------------------------|
| (1) AU_Ns | NUMBER OF ACCESS UNITS                         | 4                         |
| (2) AUSM  | ACCESS UNIT START MAP<br>(MAP_ENT_Ns ELEMENTS) | (MAPL_ENT_Ns+7) div 8     |
|           | TOTAL  | (MAPL_ENT_Ns+7) div 8 + 4 |

FIG. 35

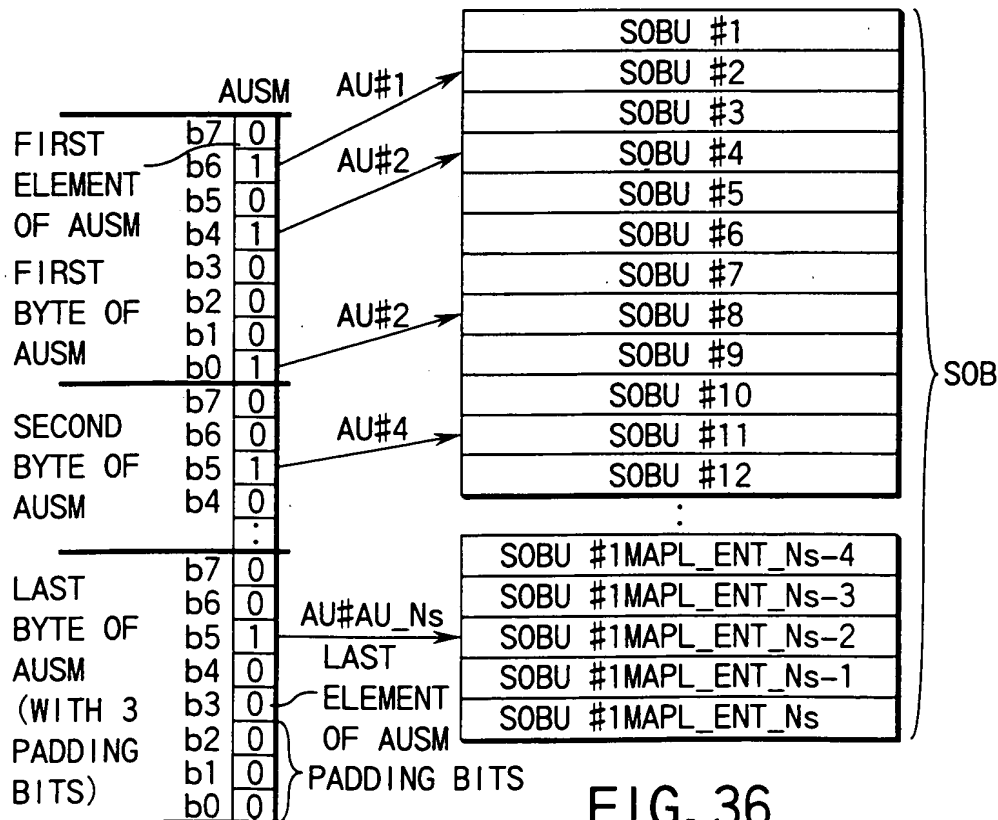


FIG. 36

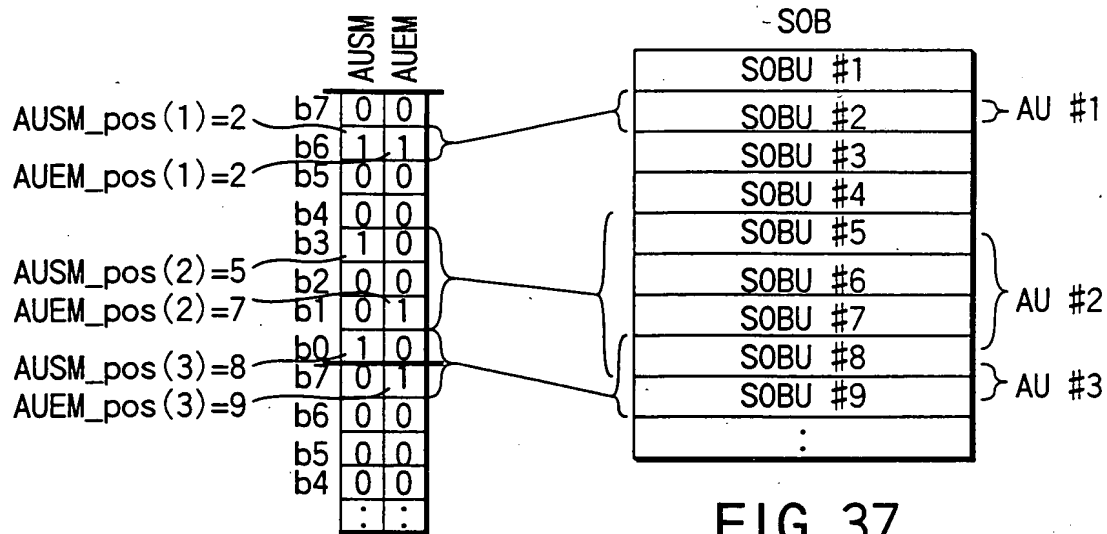
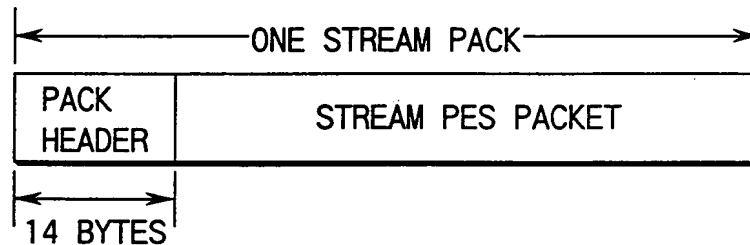


FIG. 37

FIG. 38



STRUCTURE OF THE STREAM DATA AREA WITHIN A STREAM PES PACKET

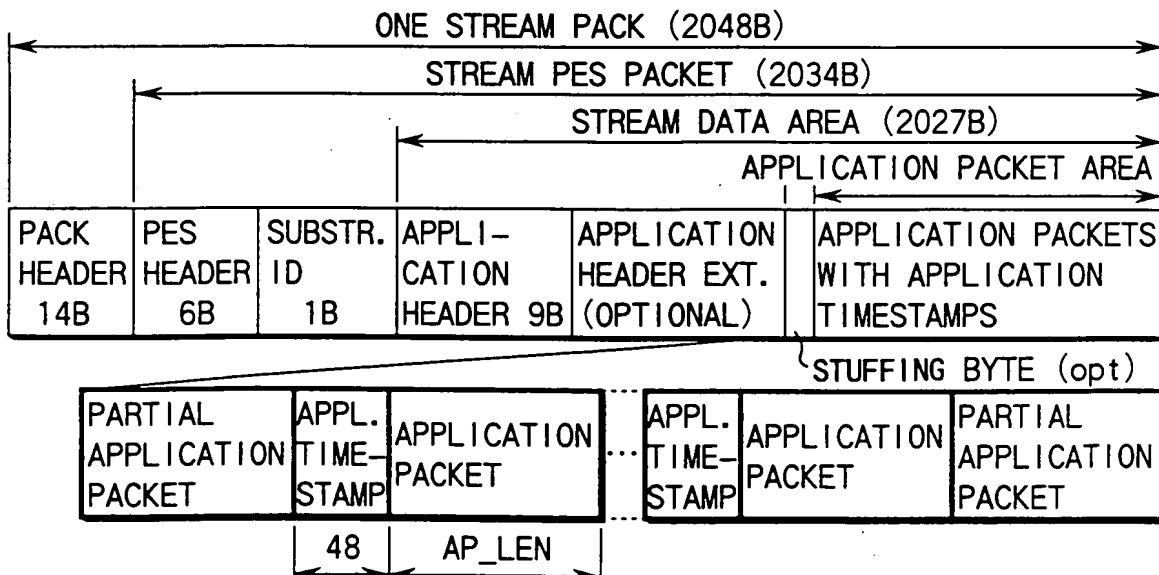


FIG. 39

APPLICATION HEADER

| FIELD                     | NUMBER<br>OF BITS | NUMBER<br>OF BYTES | VALUE         | COMMENT |
|---------------------------|-------------------|--------------------|---------------|---------|
| (1) VERSION               | 8                 | 1                  | 01h           |         |
| (2) AP_Ns                 | 8                 | 1                  |               |         |
| (3) FIRST_AP_OFFSET       | 16                | 2                  |               |         |
| (4) EXTENSION_HEADER_INFO | 2                 | 1                  | 00b, 10b, 11b |         |
| (5) RESERVED FOR CCI_ESC  | 1                 |                    | 0b OR 1b      |         |
| (6) RESERVED              | 5                 |                    | 11111b        |         |
| (7) SERVICE_ID            | 16                | 2                  |               |         |
| (8) MAX_BR_LOG2           | 8                 | 1                  |               |         |
| (9) SMO_BS_LOG2           | 8                 | 1                  |               |         |
|                           | TOTAL             | 9                  |               |         |

FIG. 40